1. A stacked die multichip device comprising:

a substrate;

a lower die having two opposing side edges each including bonding sites therealong, a base surface and an upper surface, the lower die being attached to the substrate with the lower die's base surface facing the substrate;

an upper die having a width less than the perpendicular distance separating any two opposing bonding sites along the opposing side edges of the lower die, this perpendicular distance being defined as W;

the upper die further having a base surface and an upper surface;

the upper die being attached above the lower die with the upper die's base surface facing the upper surface of the lower die; and

the upper die being rotated, in a plane substantially parallel to the upper surface of the lower die, through an angle sufficient to insure that no portion of the upper die interferes with a vertical line of sight of any bonding site on the lower die to permit wire bonding of the same, the upper die being fixed in this position.

2. The device of claim 1 wherein the angle of rotation for the upper die is defined as the minimum offset angle, α, and is at least equal to the value given by the formula $\alpha = \tan^{-1}(\frac{W}{L})$, where L is equal to the maximum distance between two outermost edges of any two bonding sites along one of the sides of the first die.

3. The device of claim 2 further comprising at least one additional upper die mounted on the second die in an analogous configuration as that of the second die, where the total number of dies, N, is limited by the formula $N = \frac{180}{\tan^{-1}(\frac{W}{L})}$.

4. A method for manufacturing a multichip module comprising the steps of:

affixing a lower die to a substrate, the lower die having two opposing side edges each including bonding sites therealong, a base surface and an upper surface, the lower die being attached to the substrate with the lower die's base surface facing the substrate;

orienting an upper die having a width less than the perpendicular distance separating any two opposing bonding sites along the opposing side edges of the lower die, this perpendicular distance being defined as W, the upper die further having a base surface and an upper surface, by rotating the upper die in a plane substantially parallel to the upper surface of the lower die, through an angle sufficient to insure that no portion of the upper die interferes with a vertical line of sight of any bonding site on the lower die to permit wire bonding of the same, the upper die being fixed in this position; and

attaching the upper die above the lower die with the upper die's base surface facing the upper surface of the lower die in this orientation.

5. The method of claim 4 wherein the upper die is oriented through an angle of rotation defined as the minimum offset angle, α, and is at least equal to the value given by the formula $\alpha = \tan^{-1}(\frac{W}{L})$, where L is equal to the maximum distance between two outermost edges of any two bonding sites along one of the sides of the first die.

6. The method of claim 5 further comprising attaching at least one additional upper die mounted on the second die in an analogous configuration to the attachment of the second die, where the total number of dies, N, is limited by the formula

$$N = \frac{180}{\tan^{-1}(\frac{W}{L})}.$$

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